

## SECTION D - ARS ENVIRONMENTAL MANAGEMENT FUNCTION

## CHAPTER III - ENVIRONMENTAL PROTECTION

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#### ENVIRONMENTAL PROTECTION

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## CHAPTER III - SECTION D

## ENVIRONMENTAL PROTECTION

## A PURPOSE OF THIS CHAPTER

This chapter describes some of the important environments and resources under ARS stewardship. It references national mandates--both executive and legislative--for the protection and preservation of these national resources and outlines ARS policies, responsibilities, and procedures for responsible ownership or stewardship. It also suggests environmental protection activities. While compliance with applicable standards is an important consideration in parts of this chapter, environmental protection is really about values.

## B PURPOSE OF ENVIRONMENTAL PROTECTION

This component of environmental management entails recognizing, understanding, managing, preserving, and enhancing natural, historic, and cultural resources; ecological systems and relationships; habitats; and environmental resources and values. Examples of the goals of environmental protection include protecting pristine areas and quantity and quality of water supplies, preserving species and genetic diversity, protecting wetlands, preserving archaeological and cultural resources, and maintaining scenic vistas.

Responsible stewardship is a common thread of these efforts in environmental protection. Sustained availability and productivity of natural and domestic ecosystems are among the measures of success.

Whereas environmental planning is concerned with minimizing the environmental effect of proposed actions, and environmental compliance focuses on meeting established standards, environmental protection aims to preserve and protect our natural heritage and resource base.

## C ENVIRONMENTAL PROTECTION PROGRAMS

The major program areas of environmental protection are:

1 Wetlands

2 Endangered and Threatened Species

3 Historic, Archaeological, and Cultural Preservation

4 Soil and Water Conservation

## C ENVIRONMENTAL PROTECTION PROGRAMS (Continued)

5 Land Management

## 6 Fish and Wildlife

## 7 Outdoor Recreation

# D WETLANDS

## 1 Background

Wetlands, which have been called "the kidneys of the landscape," are among the most ecologically productive and valuable resources in nature. Unfortunately for them, their productivity can seldom be tapped directly for commercial development, their direct economic benefit has not been as easy to define or defend, and they can make conventional development more difficult and expensive. One result of this apparent lack of value was a dramatic decline in the inventory and health of these resources. It is estimated that up to half of the wetlands in the U.S. have been lost since the beginning of European settlement.

As the role of wetlands in removing pollutants (particularly heavy metals) from water, preventing flooding, protecting shorelines, and recharging ground water aquifers has been recognized, national efforts to preserve, protect, and inventory them have accelerated.

In 1974, the U.S. Fish and Wildlife Service (FWS) launched the National Wetlands Inventory (NWI). Accurate wetlands maps are now available for much of the country.

Protection of wetlands became a priority for Federal agencies with publication of Executive Order (E.O.) 11990 in 1977. Section 404 of the Clean Water Act, administered primarily by the Army Corps of Engineers with EPA oversight, governs actions involving wetlands. The Bush Administration announced a policy of "no net loss" in the late 1980's, and wetlands have been the subject of extensive litigation.

## 2 Wetlands Values

Wetlands are protected because of their value to society. The westward expansion in the 18th and 19th centuries was supported and motivated in part by the harvest--perhaps overharvest--of beaver,

## D WETLANDS (Continued)

mink, muskrat, nutria, and otter pelts. The popularity of alligator leather, combined with wetlands destruction, almost drove that species to extinction, and leather from cows became the norm. Today, both industries are recovering, thanks in part to wetlands protection.

The species diversity in wetlands is generally high, and they support large populations of birds, particularly waterfowl. While the local economic gains from hunting (purchases of guns, ammunition, clothing, lodging, etc.) may be in decline in some places (due in part to declines in waterfowl populations), they can often be more than made up by "birders" (viewing scopes, binoculars, lodging, etc.) and other nature lovers.

Many of the commercially valuable fish and shellfish are associated with or depend on wetlands, including catfish, salmon, oysters, bluefish, striped bass, and shrimp. Destruction of wetlands in the watersheds of the Mississippi and Missouri Rivers has contributed significantly to declines in shrimp harvests in the Gulf of Mexico. Recreational and commercial fishermen, not just "environmentalists," are among the strongest supporters of wetlands protection. The wise local or State government and economy can profit greatly from the presence of this natural resource, if it is thriving, treated as a form of wealth, and not just exploited.

Nor can the ecological functions wetlands perform easily be duplicated in engineered structures, a fact even the Army Corps of Engineers has discovered. Flood mitigation, storm abatement, aquifer recharge, water quality improvement, and erosion and sediment control are among the services wetlands perform by intercepting runoff, serving as a temporary storage reservoir, and damping peak flows and tidal surges.

In some places, artificial wetlands have been created to treat wastewaters, particularly those containing heavy metals.

In addition to their local or regional ecological function, wetlands affect global conditions, having a disproportionate effect for their size on the nitrogen, sulfur, methane, and carbon dioxide cycles.

## D WETLANDS (Continued)

### 3 Policy

It is ARS policy to:

a identify, preserve, and protect wetlands on property owned or operated by ARS;

b consult with the Army Corps of Engineer, EPA, FWS, and State and local agencies when a wetland could be impacted by ARS or ARS-sponsored activity; and

c actively work to prevent or minimize damage to wetlands resulting from construction or other activities or operations on ARS property.

### 4 Protective Measures

The first step in protecting wetlands is identifying them. In general, if standing or running water is ever present on a piece of land, it may be a wetland. Two other necessary conditions are the presence of hydric soils and wetland vegetation types. FWS, EPA, and the Army Corps of Engineers, as well as State, regional, and local governments and conservation groups, have published handbooks and maps, and they are usually very cooperative and willing to help with both wetlands identification and management. Consultations with these organizations may be mandatory for agency actions affecting wetlands.

Where wetlands are present, consideration should be given to management practices such as the following:

a Avoid locating supplies of oil, gasoline, other petroleum products, solvents, pesticides, and other ecotoxic materials in or near wetlands, or where they could flow or be carried into them if spilled or otherwise released.

b Avoid the use of pesticides and other ecotoxic materials in or near wetlands, or where they could drift, flow, or be carried by wind or precipitation.

c Prevent dumping or other direct or indirect deposition or transport of wastes into wetlands.

d Keep fertilizers and manures from point (i.e., manure piles) and nonpoint sources (i.e., fields) from entering wetlands.

## E ENDANGERED AND THREATENED SPECIES

### 1 Background

Perhaps as many as 10-30 million species inhabit the earth. Some of these species, pre-eminently *Homo sapiens* and grain crops, are of recognized importance. Others promise to be the source of genes for great new medicines, pest-resistant crops, industrial processes, or food products. Still others play recognized or unrecognized roles in ecological stability on some scale.

Recognizing that human activity was pushing many species to--or over--the brink of extinction, Congress passed the Endangered Species Act (ESA) in 1973. ESA requires protection of endangered and threatened species and the habitat critical to their continued survival. While one can choose to view endangered species as a burden, another viewpoint sees the honor in having the opportunity and responsibility to work for the continued survival of a rare organism.

ESA is administered by FWS, which established a procedure for nominating and listing species to the endangered species list. This list of protected plant and wildlife species is published at 50 CFR 17. The red-cockaded woodpecker, California condor, snail darter, American alligator, Delmarva squirrel, giant panda, African elephant, black-footed ferret, peregrine falcon, green cutthroat trout, sockeye salmon, Florida golden aster, prairie bush clover, four-petal pawpaw, and northern spotted owl are among the hundreds of more-or-less well-known endangered species, and there are many more candidates.

Recently, the mixed success of efforts to protect endangered species, advances in ecology, and

dramatic and unexplained declines in amphibians have given momentum to protecting whole ecosystems. In 1993, the Department of Interior formally began testing this approach in the American West.

## 2 Policy

It is ARS policy to:

a identify, preserve, and protect threatened and endangered species and their critical habitat on property owned or operated by ARS;

### E ENDANGERED AND THREATENED SPECIES (Continued)

b consult with FWS and other agencies having jurisdiction when threatened or endangered species or a critical habitat could be impacted by ARS or ARS-sponsored activity;

c develop, implement, use, monitor, and evaluate management and recovery plans for threatened and endangered species in accordance with the Endangered Species Act, its implementing regulations, and

equivalent State or local requirements; and

d actively work to prevent or minimize damage to critical habitat or taking of threatened or endangered species as a result of construction or other activities or operations on ARS property.

## F HISTORIC AND CULTURAL PRESERVATION

### 1 Background

Compared to some cultures, the U.S. is not steeped in, or obsessed with, history. Nevertheless, with every passing year, a cultural and historical heritage is being built, and that heritage is part of what defines us as a nation. The European part of that heritage has now passed 500 years, and the non-European part is thousands of years old, perhaps more than 30,000 years.

Like most cultures, we now have places where great battles or significant historical events took place, buildings and towns with a long or great history, major engineering accomplishments, and other places and "things" we are proud of, revere, or want future generations to see and appreciate.

Recognizing that we, and the things we build, are part of our environment, Congress passed and the President has signed the National Historic Preservation Act (NHPA) in 1966 and other laws. (The primary laws and regulations in this area are included in Exhibit 1 of Section DIV, and they include the Native American Graves Protection Act of 1990.) NHPA and the other acts require preservation of the

historical and cultural foundations of our nation as a living part of our community life and development in order to give a sense of orientation to the American people and our visitors.

## F HISTORIC AND CULTURAL PRESERVATION (Continued)

Cultural, historical, and archaeological sites, buildings, districts, structures, and objects of national, state, or local significance in, or for understanding of, American history, culture, architecture, archaeology, materials, design, setting, workmanship, feeling, association, type, period, artistic value, or historical understanding are eligible for inclusion on a National Register of Historic Places. Even equipment may be eligible.

On the national level, the National Register is maintained by the Department of Interior, National Park Service and published at 36 CFR 60. Within the individual States, the State historic preservation officer (SHPO) has broad authority.

Under NHPA, ARS is responsible for inventorying or surveying its Locations for sites or objects that may be eligible for the National Register, for nominating them for inclusion, and for protecting them. If potential historic/cultural sites are discovered during construction or other activities, work should stop immediately and all necessary effort undertaken to protect, characterize, and preserve any historically, culturally, or archaeologically important information or objects. This means consulting with the SHPO and the Advisory Council on Historic Preservation (ACHP), formulating and following preservation or mitigation plans, and using qualified archaeologists or other professionals to do the necessary characterization or preservation work. If Indian artifacts are found, the local Indian tribe is to be consulted as well. Within ARS, the Real Property Management Branch, Facilities Division, is responsible for providing technical assistance in this area.

## 2 Policy

It is ARS policy to:

a identify, preserve, and protect historical, cultural, and archaeological sites, districts, and objects on property owned or operated by ARS;

b consult with the SHPO, ACHP, and other experts, including local Indian tribes, when a historical, cultural, or archaeological site, district, and object could be impacted by ARS or ARS-sponsored activity; and

## F HISTORIC AND CULTURAL PRESERVATION (Continued)

c actively work to prevent or minimize damage to any known or unknown historical, cultural, or archaeological site, district, or object resulting from construction or other activities or operations on ARS property.

### 3 Useful Sources of Information

Local historians, books on the history of the area, SHPO's, and cultural groups are good sources of information on what the local communities value and what may have to be preserved. While ARS does not necessarily have to preserve/restore a historical site or permanently abandon all plans for using a parcel because of the presence of an archaeological site (if SHPO and ACHP approval is obtained), the agency does have to use the established procedures to consider the cultural/historical value of whatever is there.

## G LAND MANAGEMENT

### 1 Topics Covered

This section describes land management considerations at new and existing ARS facilities. Topics covered in this section are:

a Soil and water conservation

b Forestry

c Grazing and cropland

d Floodplains

e Coastal zone management

f Mineral/water rights and development

## 2 Objective

As the Federal steward for numerous tracts of public and leased land, ARS and its personnel are responsible for using management practices that will protect the value of these resources. For each ARS Location, this is a unique challenge and opportunity, because no two Locations are the same mix of resources and setting. Nevertheless, some general principles, some of which are based in Federal, State, regional, or local requirements, can be stated. The objective of this section is to

G LAND MANAGEMENT (Continued)

discuss some land management considerations that may be useful at one or more ARS Locations.

### 3 Policy

It is ARS policy to:

a use good land management practices to preserve and protect the ecological and economic value of property it owns or operates;

b consult with other agencies and qualified individuals to minimize the effect of ARS or ARS-sponsored activity; and

c actively work to prevent or minimize damage to land and water resources resulting from construction or other activities or operations on ARS property.

### 4 Soil and water conservation

As few others, ARS personnel recognize the importance to our nation of good soil and water. Without these, no amount of pesticides or fertilizers would produce the agricultural abundance we enjoy. Indeed, a number of ARS' scientists study soil, water, and ways to make poor or degraded land more productive.

Soil should be protected from wind or water erosion, and waterways should be protected from silting due to water- or air-carried materials. Many States have established erosion-control requirements for construction worksites.

Whenever possible, grounds should be contoured, landscaped, and maintained to minimize erosion potential, maintenance, and water use, particularly in arid climates. The current state of the art in architecture is to integrate land management concepts in building design and landscaping.

## 5 Forestry

Forests are a renewable resource and a carbon sink. Trees can help protect erodable soils and reduce runoff and flooding in watersheds. They can help keep buildings cooler by shading or warmer by blocking wind. They can improve the habitability of streams for macroinvertebrates and fish by shading the stream and reducing stream sediment loads.

## G LAND MANAGEMENT (Continued)

Large stands of trees can modify regional climate, and even small stands of trees can modify local climate. Trees can also increase the danger from wildfires.

Where trees or forests exist on property owned or controlled by ARS, whether in managed or successional communities, consideration should be given to keeping them healthy.

## 6 Grazing and cropland

A number of ARS scientists contribute in these fields. Range and pasture scientists should be consulted in establishing the carrying capacity and monitoring needs for lands that are grazed. Other ARS scientists or local agronomists would be able to provide assistance in selecting crops and cropping systems.

## 7 Floodplains

Executive Order 11988 establishes goals and procedures for Federal agencies contemplating or supporting actions in floodplains. In general, construction and activities that could be affected by or affect floodplains should be avoided or discouraged. If a decision is made to undertake an action in a floodplain, notification of the OMB Circular A-95 state clearinghouse (See Chapter DII of this Manual) may be required, stating the reasons for the decision, whether the action will comply with all State and local floodplain requirements, and the alternatives considered. Also, in seeking new appropriations from Congress, agencies are required to notify OMB if an action would be located in a floodplain. The purpose of these requirements is to minimize flood losses and to protect and preserve the beneficial value of floodplains.

The Department of Housing and Urban Development maintains maps of floodplains, as do many State or regional planning agencies. Consultations with State agencies is recommended before undertaking an action in a floodplain.

Storage of petroleum products, chemicals, chemical wastes, pesticides, and other toxic or ecotoxic compounds on a floodplain should be avoided.

## G LAND MANAGEMENT (Continued)

### 8 Coastal zone management

The Coastal Zone Management (CZM) of 1972 authorized coastal states to establish programs and plans to protect their coastal resources. Federal actions in the coastal zone must be coordinated with the State CZM office and a determination made that the action is consistent with the state plan.

### 9 Mineral/water rights and development

Particularly in the West, surface and mineral rights to property are often sold separately. The Real Property Management Branch, Facilities Division should be consulted for information in this area.

## H FISH AND WILDLIFE

### 1 Background

ARS Locations can provide habitat and a relatively safe haven for populations of fish and game animals that are hunted recreationally or commercially. They can also serve as a "reservoir" of these animals. Even land that is being used in support of ARS' mission can provide habitat, whether or not hunting is allowed on the Location. Non-hunters may also be interested in observing, studying, or photographing these organisms in their natural environment.

If populations of fish or game are present on a Location, a management plan should be developed in coordination with FWS or State fish and game agencies. The scope of this plan should be the fish and wildlife to be managed, any threatened or endangered species or critical habitat that could be affected, environmental impacts, habitat management and improvement measures, and other requirements of FWS or the State fish and game agency.

Under certain circumstances, ARS Locations may be required to allow hunting in accordance with cooperative agreements negotiated with a State fish and game agency and FWS.

If a Location wishes to control populations of wildlife, the program must be evaluated in terms of damage losses and economic/ecological feasibility. These programs should be used only when absolutely necessary, and they should be directed on at the

## H FISH AND WILDLIFE (Continued)

individuals or population segment doing the damage. Non-specific control programs are not to be used.

If a Location desires to increase fish or wildlife populations, habitat improvement and management should be the first means considered. Stocking may be used to reintroduce an indigenous species that has been eliminated. The increase in population should be planned and executed in coordination with FWS or a State fish and game agency. The increase in population must not threaten or reduce the population of threatened or endangered species, or affect their habitat. Release or introduction of exotic (non-native) species must be coordinated and approved by FWS and/or the State fish and game agency.

### 3 Policy

It is ARS policy to:

a identify, preserve, and protect fish and wildlife populations and habitat on property owned or operated by ARS;

b consult with the FWS and State fish and game agencies in developing, implementing, managing, and evaluating plans for fish and wildlife management and habitat management and improvement for ARS property;

c consult with FWS and State fish and game agencies before taking actions that could affect fish and game populations or their habitat; and

d actively work to prevent or minimize damage to fish and wildlife populations and their habitat resulting from construction or other activities or operations on ARS property.

## I OUTDOOR RECREATION

### 1 Topics Covered

This section describes outdoor recreation considerations at new and existing ARS facilities. Topics covered in this section are:

a Outdoor recreation plan

b Off-road vehicle (ORV) control

## I OUTDOOR RECREATION (Continued)

c National trails

d Wild and scenic rivers

### 2 Policy

It is ARS policy to:

a provide outdoor recreational opportunities in accordance with an outdoor recreation plan developed in coordination with Federal and state recreation agencies;

b minimize the effect of outdoor activities on ARS' mission and the natural environment; and

c actively work to prevent or minimize damage to ARS property, facilities, and natural and other resources resulting from outdoor recreational activities or operations on ARS property.

### 3 Outdoor Recreation Plan

If an ARS Location chooses or is required to provide dispersed or intensive recreation activities for employees or the public, a comprehensive access and outdoor recreation plan should be developed under cooperative agreement and in coordination with the National Park Service (NPS) and State recreation planning agency. Dispersed recreation activities include hunting, fishing, hiking, birdwatching, rock climbing, horseriding, jogging, sightseeing, driving, and walking for pleasure. Intensive recreation activities are those that require more intensive development or maintenance, such as campgrounds, picnic areas, skiing, field sports, or water sports. It is unlikely any ARS locations would develop or be required to develop such facilities.

Outdoor recreation will not normally be allowed in areas with archaeological or historical sites, endangered or threatened species, or other sensitive features, unless management and monitoring measures are adequate to protect the resource.

### 4 ORV control

Areas in which ORV use is allowed must be designated in an ORV plan that is part of the outdoor recreation plan developed in coordination with NPS and a state recreation agency. In general,

### I OUTDOOR RECREATION (Continued)

recreational ORV use should not be allowed on ARS property.

The ORV plan shall also be consistent with Executive Order (E.O.) 11644, Use of Off-Road Vehicles on the Public Lands, and USDA regulations.

## 5 National trails

If national recreational, scenic, or historic trails are established on or across ARS property, ARS will have to follow applicable provisions of the National Trails System Act and any plans or agreements developed in establishing the trail.

## 6 Wild and scenic rivers

If rivers on or crossing ARS property are designated recreational, wild, or scenic rivers, ARS will have to follow applicable provisions of the Wild and Scenic Rivers Act and any plans or agreements developed in designating the river.

## J EXOTIC ORGANISMS AND PEST MANAGEMENT

## 1 Policy

It is ARS policy to:

a restrict the introduction of exotic organisms into the natural environment in accordance with E.O. 11987, Exotic Organisms;

b employ, to the maximum feasible extent, pest management practices that target specific pests and do not threaten or harm non-target organisms, human health or welfare, drinking water supplies, ground water, or the functioning of natural ecosystems; and

c actively work to prevent, minimize, mitigate, or repair damage to the environment resulting from activities or operations on ARS property.

## 2 Exotic Organisms

The gypsy moth, Japanese honeysuckle, and, by some accounts, Mediterranean fruit fly illustrate the kinds of ecological and economic damage that can result from intentional or accidental introduction of exotic species into ecosystems in which they do not naturally occur. ARS scientists and others,

## J EXOTIC ORGANISMS AND PEST MANAGEMENT (Continued)

including Federal and State regulatory agencies, should be consulted before new or engineered species are introduced to the environment. Of course, all due precaution should be used to prevent the escape of such organisms into the environment.

### 3 Pest Management

Departmental policy for pesticide use includes voluntarily complying with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). ARS policy and procedures, which are published in Directive 600.12, closely follow the FIFRA implementing regulations.

Compliance with FIFRA and Directive 600.12 may not be protective of the environment. In the heyday of DDT usage, people were reluctant to accept the mounting evidence that this persistent, bioaccumulating pesticide was wreaking environmental havoc. Finally, after publication of Rachel Carson's *Silent Spring*, the facts could no longer be ignored. Now, 25 years later, environmental concentrations are still significant, the pesticide remains in use in many countries, pest resistance is widespread, and epidemiological studies are attributing increases in breast cancer to DDT residues.